

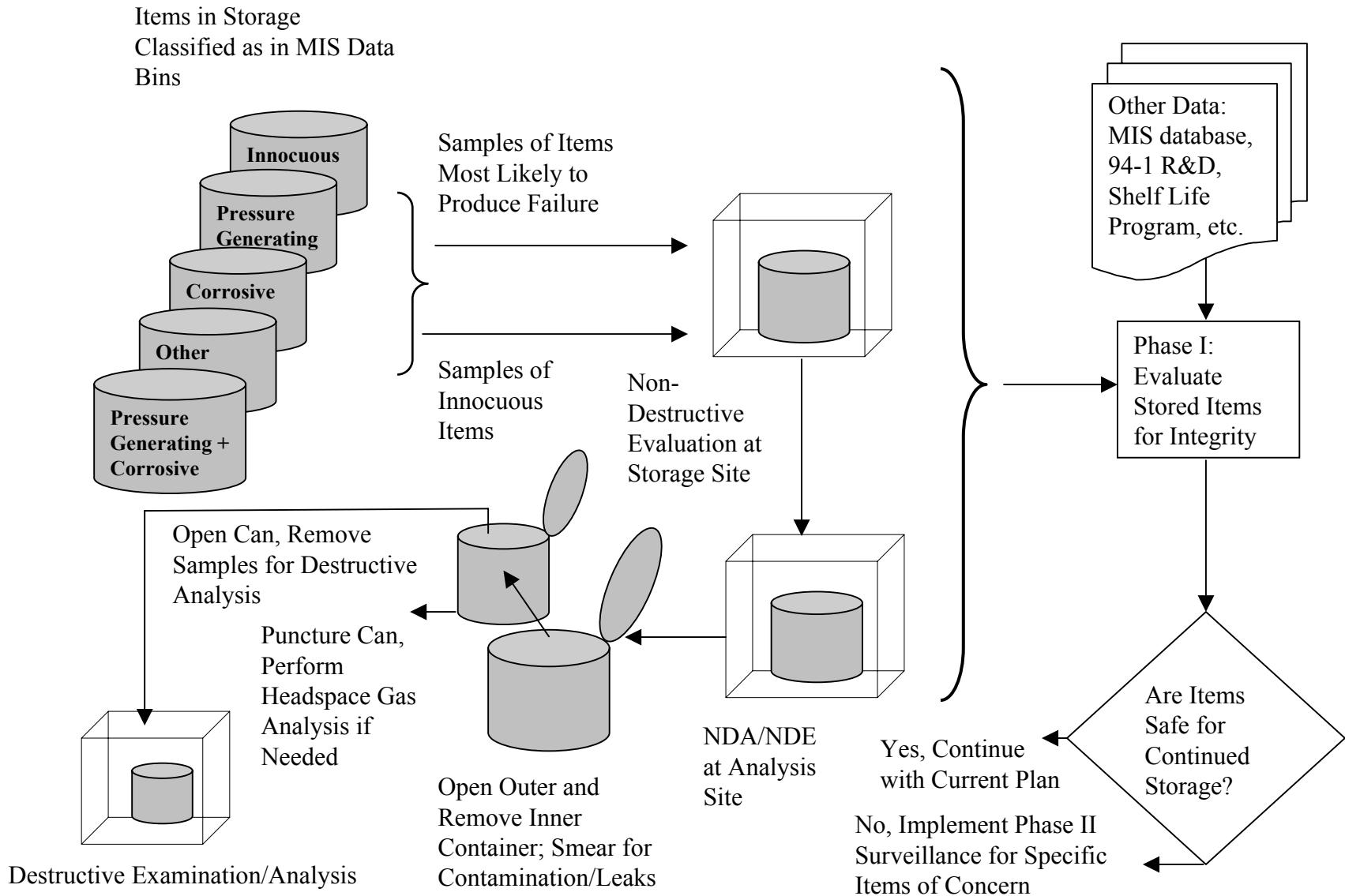
Integrated Surveillance Program

Implementation Guide

Draft, Revision 2

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Integrated Surveillance Plan



Surveillance Methods

Parameter	NDE Method	NDA Method	DE Method
Inner Container Pressure	<ul style="list-style-type: none"> • X-Ray • Radiography/Lid Deflection • Inner Can Pressure Puck (Sensor/EM Signaling) 	-----	Can Puncture/ΔP
Outer Container Pressure	Visual Examination/Container Irregularities	-----	Can Puncture/ΔP
Outer Container Integrity	<ul style="list-style-type: none"> • Contamination Smear • Leak Check/Vacuum • Weight 	-----	Open Can/Visual Inspection
Inner Container Integrity	-----	-----	<ul style="list-style-type: none"> • Contamination Smear (Inside of Outer) • Contamination Smear (Outside of Inner) • Inner Container Evaluation: Visual Examination, Metallography/Microstructure Analysis, Etc.
Moisture Content (Diagnostic Test for Potentially Pressurized Cans)	Neutron moderation	-----	<ul style="list-style-type: none"> • LOI • TGA • SFE • IGA
Constituents	Prominent Gamma	<ul style="list-style-type: none"> • Calibration • Gamma-Ray Isotopic Analysis 	<ul style="list-style-type: none"> • Actinide Assay • ICP-MS • XRF • XRD • Etc.
Weight	Balance	-----	Balance
Headspace Gas Composition	-----	-----	Can Puncture Plus MS and/or Raman Spectroscopy

Surveillance Sample Selection

Sample Classification	Relative Risk	Surveillance at Storage Site	Surveillance at Analysis Site	Frequency of Sampling
Innocuous	Low	<ul style="list-style-type: none"> • Visual Inspection • NDE 	<ul style="list-style-type: none"> • NDA /NDE • DE 	10 Items per Year
Pressure Generating	Moderate, Risk = 2x Innocuous	<ul style="list-style-type: none"> • Visual Inspection • NDE 	<ul style="list-style-type: none"> • NDA /NDE • DE • Headspace Gas 	≥ 25 Items per Year
Corrosive	Moderate, Risk = 2x Innocuous	<ul style="list-style-type: none"> • Visual Inspection • NDE 	<ul style="list-style-type: none"> • NDA /NDE • DE 	Combine with Pressure and Corrosion
Pressure Generating and Corrosive	High, Risk = 10x Innocuous	<ul style="list-style-type: none"> • Visual Inspection • NDE • Internal Pressure Sensor (If Corrosion Resistant) 	<ul style="list-style-type: none"> • NDA /NDE • DE • Other TBD • Headspace Gas 	≥ 25 Items per Year
Other	Low to High	<p>Same as Pressure Generating and Corrosive until data permit relaxation of rigor.</p>	<p>Same as Pressure Generating and Corrosive until data permit relaxation of rigor.</p>	TBD

Basis for Surveillance Sample Selection

- **Corrosion + Pressure Generating/Corrosion Only: 625 Items**
- **Pressure Generating: 700 Items**
- **Innocuous: 1500 Items**
- **Other: ~60 Items**
- **Metal: 1140 Items (Not [Yet] Planned for Surveillance)**